

## REMARKS

The Examiner rejected Claims 1 to 14 under 35 U.S.C. § 102(b) as being anticipated by Patent Number 5,060,305 (Prucnal). Such rejections are noted.

Claim 3 has been amended. Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switching devices. The Declaration sets forth facts regarding the art cited by the Examiner. Applicant respectfully submits that Claims 1-14 are allowable.

### Rejection Under 35 U.S.C. § 102(b)

Addressing the Examiner's rejection of Claims 1 to 14 under 35 U.S.C. § 102(b), Applicant respectfully suggests that Prucnal does not anticipate the claims of the present invention. Section 2131 of the Manual of Patent Examining Procedure describes the basis for anticipation under 35 U.S.C. § 102(b). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

With respect to Claims 1, 8, 9, and 14, the Examiner states:

In regard to claims 1, 8, 9 and 14, Prucnal discloses (see Figure 1) an apparatus for switching a plurality of optical paths, said apparatus comprising a first splitter (22) having an input being a primary optical signal; a second splitter (24) having an input being a secondary optical signal; an analog selection circuit (10) having a first input from said first splitter and a second input from said second splitter, said analog selection circuit including a timing circuit responsive to said primary optical signal, and a deselect circuit responsive to said timing signal, said timing circuit initiated by receiving a valid primary optical signal, said timing circuit outputting a timing signal to said deselect circuit after a selected period in which said valid primary optical signal is present; and an optical switch (12) having a first switch input from said first splitter and a second switch input from said second splitter, said switch responsive to said analog selection circuit, which causes said optical switch to route said primary optical signal to an output of said optical switch upon

receiving said timing signal as described in column 3, lines 16-68, column 4, lines 1-68 and column 5, lines 1-5.

Paper No. 6, Application Serial No. 10/083,095, at 2.

**Claims 1, 8, and 9**

Claim 1 includes limitations for "a second splitter having an input being a secondary optical signal," "an analog selection circuit having a first input from said first splitter and a second input from said second splitter," and "an optical switch having a first switch input from said first splitter and a second switch input from said second splitter, said switch responsive to said analog selection circuit."

Claim 8 includes limitations for "a second splitter having an input being a secondary optical signal and having a pair of outputs including a second splitter main output and a second splitter second output," "an analog selection circuit receiving inputs from said first splitter second output and said second splitter second output," and "an optical switch having a first switch input from said first splitter main output and a second switch input from said second splitter main output."

Claim 9 includes limitations for "a second splitter having an input being a secondary optical signal," "an analog selection circuit having a first input from said first splitter and a second input from said second splitter," and "an optical switch having a first switch input from said first splitter and a second switch input from said second splitter."

Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switches. The facts set forth in the declaration establish the following:

First, Prucnal has only a single optical input **16**, which is routed between two output fibers **56, 58**. Declaration, para. 12.

Second, Prucnal discloses an apparatus having only a single optical input **16**. The optical input **18** to the 1xN splitter (the second splitter) **24** is the output of the 1x2 splitter (the first splitter) **22**. Prucnal does not disclose a secondary optical input to the 1xN splitter (the second splitter) **24**. Declaration, para. 13.

Third, Prucnal discloses an optical routing controller **10** that receives a single input from fiber **18**. Declaration, para. 14.

Fourth, Prucnal does not disclose the photonic switching element **12** receiving an optical input from two splitters **22, 24**. Declaration, para. 15.

Applicants respectfully submit that Claims 1, 8, and 9 are not anticipated by Prucnal because first, Prucnal does not teach each and every element of the claimed invention, and second, Applicants have submitted evidence refuting the Examiner's claims of anticipation. Accordingly, Applicants respectfully request that the Examiner withdraw his rejection of Claims 1, 8, and 9. Further, Claims 2 to 7 and 10 to 13 are also in condition for allowance as depending from allowable base claims.

#### **Claim 14**

Claim 14 includes means-plus-function limitations, as defined by 35 U.S.C. § 112, sixth paragraph. A means-plus-function limitation must be interpreted to cover the corresponding structure, materials, or acts in the specification and "equivalents thereof." 35 U.S.C. § 112, sixth paragraph; *see also* MPEP § 2181. The Examiner "must apply 35 U.S.C. 112, sixth paragraph in appropriate cases, and give claims their broadest reasonable interpretation, in light of and consistent with the written description of the invention in the application." MPEP 2181, pg. 2100-209, 8th ed. (emphasis added).

In accordance with MPEP § 2181, it no longer is acceptable practice for the Examiner to interpret means-plus-function limitations "as reading on any prior art means or step which performed the function specified in the claim without regard for whether the prior art means or step was equivalent to the corresponding structure, material or acts described in the specification." MPEP § 2181, pg. 2100-209 (emphasis added). "[T]he application of a prior art reference to a means or step plus function limitation requires that the prior art element perform the identical function specified in the claim." MPEP § 2182, pg. 2100-214. "However, if a prior art reference teaches identity of function to that specified in a claim, then under *Donaldson* an examiner carries the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the

specification which has been identified as corresponding to the claimed means or step plus function." *Id.* (emphasis added).

The MPEP states that "the examiner should provide an explanation and rationale in the Office action as to why the prior art element is an equivalent." MPEP § 2183, pg. 2100-215. Factors that support a conclusion that the prior art element is an equivalent includes "(A) the prior art element performs the identical function specified in the claim in substantially the same way, and produces substantially the same results as the corresponding element disclosed in the specification," "(B) a person of ordinary skill in the art would have recognized the interchangeability of the element shown in the prior art for the corresponding element disclosed in the specification," "(C) there are insubstantial differences between the prior art element and the corresponding element disclosed in the specification," and "(D) the prior art element is a structural equivalent of the corresponding element disclosed in the specification." *Id.* These same factors can be used by Applicants to support a conclusion that one element is not equivalent to another. MPEP § 2184, pg. 2100-218. "A finding according to any of the above [factors] would represent a sufficient, but not the only possible, basis to support a conclusion that an element is or is not an equivalent. There could be other indicia that also would support the conclusion." MPEP § 2184, pg. 2100-219.

Accordingly, it is necessary to consider the specification in determining the scope of the rejected claim. Claim 14 includes limitations for "a means for routing a primary optical signal through an optical switch; a means for sensing a valid primary optical signal; a means for routing a secondary optical signal through said optical switch; a means for determining when said primary optical signal has been valid for a selected period; a means for deselecting said secondary optical signal and routing said primary optical signal through said optical switch." The structures corresponding to these means limitations are described in the Specification, and those structures, or their equivalents, are not disclosed by Prucnal. As required by MPEP § 2181, the Examiner has not shown "that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification."

Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switches. As described above, the Declaration sets forth facts that establish that Prucnal does not disclose structures corresponding to those of the application, or equivalents thereof. See Declaration, paras. 9-15.

Applicants respectfully submit that Claim 14 is not anticipated by Prucnal because first, the Examiner has not shown that the prior art structures are the same as those described in the Application nor has the Examiner provided an explanation and rationale describing why the prior art elements are equivalent to those described in the Application, second, Prucnal does not disclose equivalent structures corresponding to those disclosed in Applicants' specification, and, therefore, Prucnal does not teach each and every element of the claimed invention, and third, Applicants have submitted evidence refuting the Examiner's claims of anticipation. Accordingly, Applicants respectfully request that the Examiner withdraw his rejection of Claim 14.

### **Claims 2 and 3**

With respect to Claims 2 and 3, the Examiner states:

Regarding claims 2 and 3, Prucnal discloses that said timing circuit outputs a timing signal to said deselect circuit after a selected period in which said valid primary optical signal is present, said deselect circuit causes said optical switch to route said primary optical signal to an output of said optical switch on receiving said timing signal as described in column 3, lines 16-68, column 4, lines 1-68 and column 5, lines 1-5.

Paper No. 6, Application Serial No. 10/083,095, at 3.

Initially, Applicants note that Claim 3 has been amended to correct the antecedent basis for the valid primary optical signal. Notwithstanding that Claims 2 and 3 are allowable as depending from an allowable base claim, Applicants respectfully submit that Prucnal does not anticipate Claims 2 and 3 because Claims 2 and 3 include limitations not disclosed by Prucnal.

Claim 2 includes the limitations for "a timing circuit responsive to said primary optical signal; and a deselect circuit responsive to said timing circuit." Claim 3 includes the limitations for "said timing circuit outputs a timing signal to said deselect circuit after a selected period in which a valid primary optical signal is present, said

deselect circuit causes said optical switch to route said primary optical signal to an output of said optical switch upon receiving said timing signal."

Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switches. The facts set forth in the declaration establish the following:

First, Prucnal discloses several delay devices, including the optical delays **30, 32, 34, 36, 38** and the delay buffer **14**. The optical delays **30, 32, 34, 36, 38** serve to time-shift the optical signal in fiber **18** such that different portions of the optical signal arrive at the summer **26, 28** at the same time, thereby allowing the address information on the optical signal to be decoded. The delay buffer **14** time-shifts the optical signal from fiber **20** an amount equal to the total processing time of the optical routing controller **10**. Declaration, para. 19.

Second, timing circuits typically provide an output or cause an action to occur at a selected time after the circuit is initiated. Declaration, para. 20.

Third, the delay devices disclosed in Prucnal are not timing circuits. Declaration, para. 20.

Fourth, the optical delays **30, 32, 34, 36, 38** and the delay buffer **14** disclosed in Prucnal do not output a timing signal to the optical routing controller **10** after a selected period in which said valid primary optical signal is present. The apparatus of Prucnal is not concerned with valid optical signals, rather, Prucnal discloses routing an optical signal based on addressing information contained within the optical signal. Declaration, para. 21.

Applicants respectfully submit that Claims 2 and 3 are not anticipated by Prucnal because first, Prucnal does not teach each and every element of the claimed invention, and second, Applicants have submitted evidence refuting the Examiner's claims of anticipation. Accordingly, Applicants respectfully request that the Examiner withdraw his rejection of Claims 2 and 3.

## **Claims 4, 10 and 12**

With respect to Claims 4, 10 and 12, the Examiner states:

Regarding claims 4, 10 and 12, Prucnal discloses a network including a resistor and a capacitor having a charging time defining a selected period before said primary optical signal is routed through said optical switch. Although the prior art does not specifically disclose the claimed resistor and capacitor network, this is seen to be an inherent teaching of that device since a timing circuit is disclosed and it is apparent that some that of resistor-capacitor network must be present for the switch to function as intended.

Paper No. 6, Application Serial No. 10/083,095, at 3.

Notwithstanding that Claims 4, 10 and 12 are allowable as depending from an allowable base claim, Applicants respectfully submit that Prucnal does not anticipate Claims 4, 10 and 12 because Claims 4, 10 and 12 include limitations not disclosed by Prucnal. Claim 4 includes limitations for "a network including a resistor and a capacitor." Claim 10 includes limitations for "a network including a resistor and a capacitor." Claim 12 includes limitations for "a network including a resistor and a capacitor."

Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switches. The facts set forth in the declaration establish the following:

First, Prucnal does not disclose a network including a resistor and a capacitor. Declaration, para. 25.

Second, a resistor and a capacitor are not inherent in the apparatus disclosed in Prucnal. Declaration, para. 26.

Applicants respectfully submit that Claims 4, 10 and 12 are not anticipated by Prucnal because first, Prucnal does not teach each and every element of the claimed invention, and second, Applicants have submitted evidence refuting the Examiner's claims of anticipation. Accordingly, Applicants respectfully request that the Examiner withdraw his rejection of Claims 4, 10 and 12.

### **Claims 5 and 13**

With respect to Claims 5 and 13, the Examiner states:

Regarding claims 5 and 13, Prucnal discloses said deselect circuit includes a network including a Schmitt trigger (50, 48) and a diode, said network causing said optical switch to route said primary optical signal upon actuation of said network by a timing signal from said timing circuit as shown in Figure 1 and as described in as described in column 3, lines 16-68 and column 4, lines 1-68.

Paper No. 6, Application Serial No. 10/083,095, at 3.

Notwithstanding that Claims 5 and 13 are allowable as depending from an allowable base claim, Applicants respectfully submit that Prucnal does not anticipate Claims 5 and 13 because Claims 5 and 13 include limitations not disclosed by Prucnal. Claim 5 includes the limitations for "a network including a Schmitt trigger and a diode." Claim 13 includes the limitations for "a network including a Schmitt trigger and a diode."

Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switches. The facts set forth in the declaration establish that Prucnal does not disclose an apparatus that uses both a Schmitt trigger and a diode in the same circuit. Declaration, para. 31.

Applicants respectfully submit that Claims 5 and 13 are not anticipated by Prucnal because first, Prucnal does not teach each and every element of the claimed invention, and second, Applicants have submitted evidence refuting the Examiner's claims of anticipation. Accordingly, Applicants respectfully request that the Examiner withdraw his rejection of Claims 5 and 13.

### **Claims 6 and 11**

With respect to Claims 6 and 11, the Examiner states:

Regarding claims 6 and 11, Prucnal discloses said analog selection circuit is responsive to an optical signal strength of said primary optical signal and is responsive to an optical signal strength of said secondary optical signal as described in column 3, lines 16-68, column 4, lines 1-68 and column 5, lines 1-5.

Paper No. 6, Application Serial No. 10/083,095, at 3.



Notwithstanding that Claims 6 and 11 are allowable as depending from an allowable base claim, Applicants respectfully submit that Prucnal does not anticipate Claims 6 and 11 because Claims 6 and 1 include limitations not disclosed by Prucnal. Claim 6 includes limitations for "said analog selection circuit is responsive to an optical signal strength of said primary optical signal and is responsive to an optical signal strength of said secondary optical signal." Claim 11 includes limitations for "said analog selection circuit is responsive to an optical signal strength of said primary optical signal and is responsive to an optical signal strength of said secondary optical signal."

Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switches. The facts set forth in the declaration establishes that Prucnal does not disclose a primary optical signal and a secondary optical signal and the optical routing controller **10** of Prucnal is not responsive to a secondary optical signal. Declaration, paras. 35 & 36.

Applicants respectfully submit that Claims 6 and 11 are not anticipated by Prucnal because first, Prucnal does not teach each and every element of the claimed invention, and second, Applicants have submitted evidence refuting the Examiner's claims of anticipation. Accordingly, Applicants respectfully request that the Examiner withdraw his rejection of Claims 6 and 11.

#### **Claim 7**

With respect to Claim 7, the Examiner states:

Regarding claim 7, Prucnal discloses said analog selection circuit includes a means for routing said secondary optical signal after said primary optical signal becomes invalid a means for determining whether said primary optical signal has been valid for a selected period and a means for deselecting said secondary optical signal and routing said primary optical signal through said optical switch as described in column 3, lines 16-68, column 4, lines 1-68 and column 5, lines 1-5.

Paper No. 6, Application Serial No. 10/083,095, at 4.

Notwithstanding that Claim 7 is allowable as depending from an allowable base claim, Applicants respectfully submit that Prucnal does not anticipate Claim 7 because Claim 7 includes limitations not disclosed by Prucnal. Claim 7 includes

means-plus-function limitations, as defined by 35 U.S.C. § 112, sixth paragraph. Claim 7 includes limitations for "a means for routing said secondary optical signal after said primary optical signal becomes invalid; a means for determining whether said primary optical signal has been valid for a selected period; and a means for deselecting said secondary optical signal and routing said primary optical signal through said optical switch."

As required by MPEP § 2181, the Examiner has not shown "that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification." Also, the Examiner has not provided "an explanation and rationale in the Office action as to why the prior art element is an equivalent."

Filed herewith is a 37 C.F.R. § 1.132 Declaration of Reddy Urimindi, an expert in the field of optical switches. The facts set forth in the declaration establish the following:

First, Prucnal does not disclose both a primary optical signal and a secondary optical signal. Declaration, para. 40.

Second, Prucnal does not disclose determining the validity of an optical signal, Neither does Prucnal disclose an optical signal being valid for a selected period. Declaration, para. 41.

Third, Prucnal discloses a device that routes a single optical signal between two outputs. The statement from the Examiner describes a device that switches two optical signals to a single output. Accordingly, the statement from the Examiner is not correct. Declaration, para. 43.

Applicants respectfully submit that Claim 7 is not anticipated by Prucnal because first, the Examiner has not shown that the prior art structures are the same as those described in the Application nor has the Examiner provided an explanation and rationale describing why the prior art elements are equivalent to those described in the Application, second, Prucnal does not disclose equivalent structures corresponding to those disclosed in Applicants' specification, and, therefore, Prucnal does not teach each and every element of the claimed invention, and third, Applicants

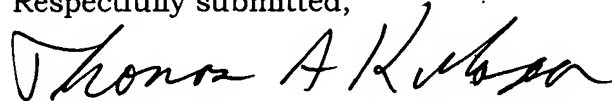
have submitted evidence refuting the Examiner's claims of anticipation. Accordingly, Applicants respectfully request that the Examiner withdraw his rejection of Claim 7.

### **Conclusion**

In view of the amendment of Claim 3, it is believed that the above-identified patent application is in a condition for the issuance of a Notice of Allowance. Such action by the Examiner is respectfully requested. If, however, the Examiner is of the opinion that any of the drawings or other portions of the application are still not allowable, it will be appreciated if the Examiner will telephone the undersigned to expedite the prosecution of the application.

Please charge any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 16-1910 (26308.01).

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Thomas A. Kulaga". The signature is fluid and cursive, with the first name "Thomas" and last name "Kulaga" clearly distinguishable.

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